

**REMARKS**

The above Amendments and these Remarks are submitted under 35 U.S.C. § 132 and 37 C.F.R. § 1.116 in response to the Final Office Action mailed October 14, 2004.

**Summary of the Examiner's Action and Applicants' Response**

The Examiner has rejected Claims 1, 3-7, 10-13, and 15 under 35 U.S.C. 103(a) as being obvious based on Law, et al., U.S. Patent No. 5,588,848, in view of Moran, U.S. Patent No. 6,149,443. The Examiner has rejected Claims 8 and 14 under 35 U.S.C. 103(a) as being obvious based on Law, et al. and Moran in view of Pereira, et al., U.S. Patent No. 6,039,616. Applicants respectfully traverse the rejections. In this amendment, Applicants have amended Claims 1, 3, and 10. After entry of this Amendment, Claims 1, 3-8, and 10-15 remain pending.

**Interview Summary**

Applicants respectfully thank the Examiner for agreeing to a telephone interview on March 8, 2005 during which the Office Action was discussed. During the interview, Applicants explained how the present invention is not obvious in view of the cited references. The Examiner concluded the interview with the statement that a response must be filed in order to enable him to review our arguments and any amendments in view of the cited prior art.

**Response to Rejection to Claims 1, 3-7, 10-13 and 15 under 35 U.S.C. §103**

The Examiner has rejected Claims 1, 3-7, 10-13, and 15 under 35 U.S.C. 103(a) as being obvious based on Law, et al. in view of Moran. Applicants have amended Claims 1 and 10 to further patentably define the invention. Claim 1, as amended, claims a Surface Mounted Technology (SMT) connector for mounting between a first printed circuit board having a first contact area and a second printed circuit board having a second contact area. Claim 10, as amended, claims a surface mounted technology connector for enabling power to flow between a first printed circuit board having a first contact area and a second printed circuit board having a second contact area. The surface mount technology connector, as claimed in Claims 1 and 10, as amended, includes a member having a hollow **trapezoidal cross-section “such that the connector has substantially improved structural resistance to lateral movement.”**

The present specification describes that a key problem solved by the present invention

which is neither recognized nor addressed by the cited prior art is the lack of lateral support and resulting limited mechanical stability provided by prior art SMT connectors. (See paragraph [0005]). In describing an embodiment of the present invention, the specification describes that, in addition to providing two footprints of different sizes, “[a] second advantage of a trapezoidal connector is that it is structurally more resistant to lateral movements of the PCBs than a rectangular connector. A rectangular connector can easily fold or collapse when opposite sides are moved parallel to one another. A trapezoidal connector is more rigid as the sides of different length resist the folding or collapsing of the connector.” (See paragraph [0018]).

The Examiner stated in the Office Action that Law, et al. discloses a connector having two substantially parallel sides for mounting between two circuit boards, as claimed in Claims 1 and 10, but does not disclose the relative size of the contact areas. The Examiner stated that Moran discloses a hollow connector having two parallel sides wherein one side is smaller than the other side, thus providing a larger and more stable base for the connector. The Examiner concluded in his Office Action that it would be obvious to one skilled in the art to combine the teachings of Moran, of providing a larger base for the connector, with the hollow cross section connector taught in Law, et al. to form a connector having a trapezoidal cross section as claimed in Claims 1 and 10. Applicants respectfully disagree.

Applicants respectfully submit that the trapezoidal cross-section of the connector is such that the connector is structurally more resistant to lateral movement, as claimed in Claims 1 and 10, as amended. In contrast, Law, et al. teaches a rectangular parallelepiped connector. (Col. 2, lines 1-5, FIGs. 1-9). Applicants respectfully submit that Law, et al. does not teach or suggest a connector having a trapezoidal cross section such that the connector is structurally more resistant to lateral movement, as claimed in Claims 1 and 10, as amended.

Moran teaches a compressible ground connector and standoff apparatus or spring member for mounting between circuit boards. (Col. 1, lines 22-26). The Examiner refers to connector 30 in Moran as teaching a member wherein one side is smaller than the other side. The spring member 30 taught in Moran “is generally C-shaped and has upper and lower parallel, generally flat, spaced legs 32, 34 connected by arcuate, resilient portion 35. The lower leg 34 is longer than upper leg 32, and a limiter **flap** 36 projects downwardly from the free end of the upper leg towards the lower leg, with the free end 38 of flap 36 terminating **short** of lower leg 34 when the device is in an uncompressed state, as in FIG. 5.” (Col. 3, lines 52-59, emphasis

added). Thus, the arc-shaped flap 36 is not connected to the leg 34 until Moran further teaches that, “[w]hen the two boards are secured together, the upper leg 34 will first contact the pad 26, and the device 30 will then start to compress, until the free end 38 of limiter flap 36 contacts leg 34, limiting further compression.” (Col. 4, lines 3-7). Thus, the arc-shaped flap 36 is not connected to the leg 34 until the spring member 30 is compressed. Applicants respectfully submit that the shape and configuration of the compressible spring member 30 does not teach or suggest a connector having a trapezoidal cross-section such that the connector has substantially improved structural resistance to lateral movement, as claimed in Claims 1 and 10. Moreover, the lack of connection of the free end 38 of the flap 36 until the spring member 30 in Moran is compressed teaches away from a connector having substantially improved structural resistance to lateral movement. Applicants respectfully submit that there is no suggestion or motivation to modify the connector in Law, et al. with the teachings of Moran. Even if there were, the suggested modification would not teach or suggest a connector having a trapezoidal cross-section such that the connector has substantially improved structural resistance to lateral movement, as claimed in Claims 1 and 10.

Furthermore, Law, et al. states that the inductance of the connector is a function of the number of slotted sides and the mechanical parameters of the connector, including the height and width. (Fig. 1, Col. 3, lines 15-20). Law, et al. teaches calculations for inductance that are based on various mechanical measurements including a single parameter, C, representing the width of the top and the width at the base of the connector, i.e., the top and base width are the same for the calculations. (Col. 3, lines 15-20, and lines 42-44 plus the table for device inductance L). The Examiner states that connector 30 in FIGs. 5 and 6 in Moran discloses a hollow connector having two parallel sides wherein one side is smaller than the other side. Since Law, et al. teaches inductance calculations which are based on only one width parameter, C, there would have been no suggestion or motivation to combine the teachings of Law with Moran to change the width of the base of the connector in Law, et al., so that it is different than the top of the connector, as suggested by the Examiner. In fact, modifying the connector in Law to have a base width different than the top width, as in Moran, would change the principle of operation of Law, et al. in that the basic assumption of a single width for the calculations would be changed.

Therefore, Applicants respectfully submit that, for all of the above reasons, Claims 1 and 10 are not obvious based on Law, et al. and Moran. Claim 3 has been amended to depend from

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Claim 1. Claim 3, as amended, and Claims 4-9 depend from Claim 1 and are not obvious based on Law, et al. and Moran for the same reasons as above for Claim 1. Claims 11-15 depend from Claim 10 and are not obvious based on Law, et al. and Moran for the same reasons as above for Claim 10.

**Response to Rejection to Claims 8 and 14 under 35 U.S.C. §103**

The Examiner has rejected Claims 8 and 14 under 35 U.S.C. 103(a) as being obvious based on Law, et al. and Moran in view of Pereira, et al., U.S. Patent No. 6,039,616. Pereira, et al. teaches a circular electrical connector. Pereira, et al. does not teach or suggest the connector having a **trapezoidal cross-section** such that the connector has **substantially improved structural resistance to lateral movement**, as claimed in Claims 1 and 10. Therefore, Applicants respectfully submit that, for this reason and for the same reasons as above for Claims 1 and 10, Claims 8 and 14 are not obvious based on Law, et al. and Moran in view of Pereira, et al.

**Conclusion**

For the above reasons, Applicants respectfully submit that all pending claims in the present application are in condition for allowance. Such allowance is respectfully solicited.

If a telephone conference would expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (415) 267-6200.

Respectfully submitted,

  
Donald L. Bartels  
Registration No: 28,282

March 10, 2005  
COUDERT BROTHERS LLP  
Two Palo Alto Square  
3000 El Camino Real, Fourth Floor  
Palo Alto, California 94306  
Telephone: (650) 739-2800  
Telefax: (650) 739-2801